

ABSTRACT OF THE INVENTION

The present invention relates to a method of producing a recombinant peptide, a recombinant protein, or a product from metabolic engineering using a genetically modified methylotrophic bacterium, and more particularly to *Methylobacterium extorquens* ATCC 55366. The method comprises introducing an expression vector into the methylotrophic bacterium, the expression vector comprising a polynucleotide sequence, encoding for a peptide or protein, or allowing for production of a product from metabolic engineering under the control of a regulated promoter. The method also comprises growing the genetically modified methylotrophic bacterium in a minimal salts medium lacking organic sugars and containing methanol. A metal ion may be used for regulating the expression of the polynucleotide sequence by the promoter.